The Killing Fields of Iraq

A personal accounting of the discoveries of mass graves, and how SMDC located them

By Master Sgt. Richard Burch, USAF

SOMEWHERE IN IRAQ — The buses would arrive early in the morning; having driven all night from some small village; each packed with men, women and children. They would find themselves in a desolate, barren stretch of nowhere … their final resting-place. The Soldiers would empty the buses, lining up their victims, hands bound and — if lucky, eyes blindfolded — at the edge of a trench. The Soldiers would begin their long day's work of methodically slaughtering the families. At the end of the day, they'd bury their work, pack up and prepare for their next day of loyal duty to Saddam.

Since the overthrow of Saddam Hussien, there have been bone-chilling discoveries, almost on a daily basis, of the atrocities committed by the former Baath party. These grisly reminders come to us in the form of mass graves, dotting the landscape in more numbers than anyone would care to imagine. At last count, there are more than 270 reported mass graves with more than 50 verified by international forensic teams. The number of Iraqi and foreign victims of Saddam's regime is estimated anywhere from 100 to 400 thousand people. Kurds from northern Iraq, Shias from southern Iraq, Kuwaiti and Iranian prisoners of war … touching almost every person's life in the region.

I became involved with the Iraqi mass graves during my first stint of duty in Baghdad, from May through July 2003. I was assigned as a spectral analyst to the Coalition Provisional Authority Space Support Cell. One of the agencies we supported was the Ministry of Human Rights, which had been given the daunting task of assessing and verifying reported Iraqi mass graves. The Space Support Cell initially was tasked with providing high-resolution imagery and mapping support to the team for site survey planning. It became readily apparent that spectral imagery could play a valuable role in the mass grave assessment. My first attempt at using spectral to support the team was a success, in that I could determine the location of the site by highlighting the soil disturbances in the area, but since they already knew where the mass graves were located, the information was of minimal value.

Not willing to give up easily, I got in contact with Bruce Gerrick (Space and Missile Defense Command Spectral Operations Resource Center, SRA International Contractor), Senior Spectral Analyst/Geologist, for some ideas of how to use spectral data to highlight features that might indicate a mass grave. I gave him the background on what I had already provided to the Coalition Provisional Authority team and hoped that there could be something we could key on to find mass graves.

There is no such thing as a "mass grave finder," since there are no definitive indicators to differentiate a mass grave from any other soil disturbance. Gerrick did notice that my analysis was keying on a certain mineral, gypsum, common in the arid regions of the Middle East.

Gypsum is an evaporite mineral usually located on or just below the top few centimeters of the surface. Once the hard-pan, a highly resistant subsurface layer (caliche layer) is disturbed, elements mobilized by the influx of fluids allows the precipitation of gypsum to be expressed and it can then be identified on the surface using already proven methods.

Knowing we could find gypsum after the grave site had been initially dug, we could go back in the data archives to analyze spectral data over the same area to find when there was no gypsum present. Using that information, we are able to narrow down the time frame to when the event occurred.

With what I deemed as new, earth-shattering analysis in hand, I called the Coalition Provisional Authority assessment team together for a briefing of my results.

The response I initially received from my techno-

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
2004		**00-00-2004 to 00-00-2004**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
The Killing Fields of Iraq. A personal accounting of the discoveries of mass graves, and how SMDC located them	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Army Space & Missile Defense Command,Army Forces Strategic Command,Redstone Arsenal,AL,35809**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

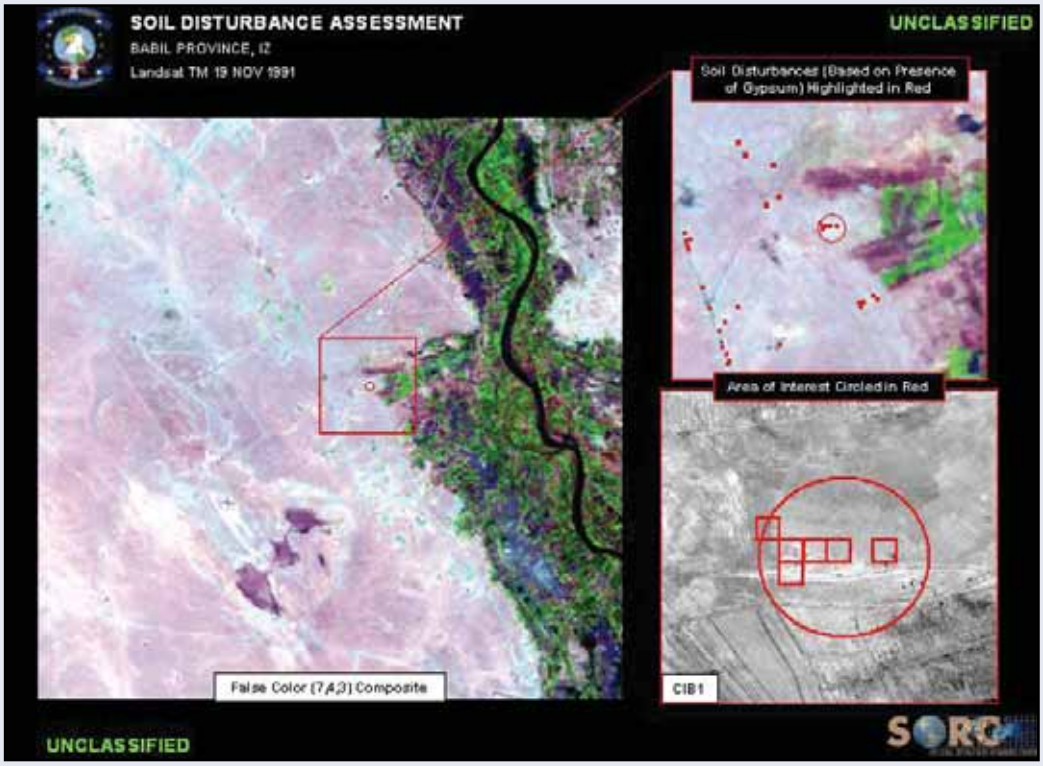
12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**Same as Report (SAR)**	**4**	



speak infused briefing was resounding … silence. OK, either I left something important out, or I'd just wasted two weeks of intense analysis.

Then, Ian Hansen (Assessment Team Leader) said, "So, mate, (he's British) what you're telling us is you can scientifically prove the date of the mass grave event?"

Well, within the time frame of the archived data, yes.

His reply was "Bloody outstanding!" He explained that if we could accurately analyze spectral data around each one of the verified mass graves and prove that the events took place during a certain time frame, the results could be used as evidence to prosecute the former regime, including Saddam Hussien.

Wait a minute; our analysis could be used to prosecute one of the most horrific dictators of our time … what an honor!

The SORC (FWD) had only two weeks left on our deployment orders, so I passed all my contact information to the Coalition Provisional Authority team, and guaranteed them the full support of the SORC. At the time, I really didn't know what I'd just volunteered to do.

Just over two months after my return to the States it became blazingly apparent, when the Director of the Human Rights and Transitional Justice Ministry sent a letter to Space and Missile Defense Command — Colorado Springs requesting support from the SORC, specifically Bruce and myself, with "on-site" mass grave assessment. They had been so impressed with the analysis that they wanted us to accompany the mass grave assessment team to some unverified, still pristine, mass grave sites to perform geologic and spectral analysis.

The assessment team wanted to prove that the indicators we were finding in the spectral data were definitely at the suspected sites and also to find other indicators that would help their case. Bruce and I volunteered without blinking; this would be a once in a lifetime chance to use our skills on an international scale. We packed our bags, support equipment and gigabytes of data — and began our adventure.

We'd hardly set our bags down in Baghdad when we were told to get ready to leave for a two-week site assessment. We were going to the southern desert near the border of Saudi Arabia to verify several suspected mass graves from the mid 1980s.

We flew from Baghdad to Basrah to catch our connecting flight, a low-level high-speed combat ride in a British CH-47 Chinook. At some points, so low-level were we that we actually kicked up dust from the desert floor. We arrived shaken but safe at a Dutch Marine security force base, our forward operating location, and began preps for our missions.

It was decided we would drive out into the desert each day before sunrise and return after sunset. We would need this "secrecy" to ensure our movements would be hidden from the local populace, hopefully keeping these sites as pristine as possible to afford the oncoming international excavation teams untouched forensic evidence.

We found out first-hand that information from reliable sources isn't always reliable. Some of the coordinates of suspected sites turned out to be nothing more than empty desert, but we soon found an area that looked as though it held promise. One site had heavy vehicular tracks into and out of the area, large-scale excavations, with no real rhyme or reason, and old sun bleached clothing. Bruce and I began the geologic analysis of the area, taking notes of spatial and spectral features that might help us

with site verification. We found that our previous analysis was exact and there were significant surface coatings of gypsum all over the suspected grave site, not characteristic of the surrounding area.

While we were doing our geologic analysis, the forensic archeologists were performing their own analysis of the site, consisting of a small trench dug across the suspected grave. Over the last 19 years in the Air Force, I've had a lot of odd jobs in some pretty obscure places, but none of that would prepare me for what I was about to see and do.

Bruce and I volunteered to help dig the trench, at the same time taking detailed notes on the stratigraphy of the backfill to support future analysis. As we got further in depth, we started noticing a definite change in the color of the soil, and a discernable odor … not stench, just a stale metallic smell possibly caused by the high concentration of localized iron-oxidation.

At that point, the archeologists took over the dig within inches of depth from where we left off; they started uncovering small bones and brightly colored clothing. They were painstakingly meticulous, using small paintbrushes and carefully removing the dirt with their bare hands. It took nearly an hour to clean out a one square foot area.

The results of their analysis came out as dry as a reading of the Sunday news, yet as clear as a bell to this day.

"One immature human femur, one immature human pelvis, estimate based on bone length approximately five to six years in age."

"WHAT?" I had a huge lump in my throat " You mean, a child?"

The answer came back as dry as the last.

"Yes, and based on the clothing, I'd say it's a female."

My head was spinning … a little girl, in a bright, purple flowered dress with gold ribbon … then more unwelcome information …

"Looks like they had her hands bound," the archeologist said, holding up what probably used to be her pink hair ribbon, which some ingenious Iraqi Soldier had turned into a makeshift binding.

That was it for me … I had to go for a walk. Luckily, they decided that they wouldn't disturb the site any further and started back filling the trench. I will never forget my feelings or the scenarios that still run through my head, if I live to be a hundred years old. But, we're professionals and we had other sites to analyze and our days in this area were numbered … so I stored that away and got back to work.

We finished up our surveys in the desert and made the return trip to Baghdad. We had a few days to rest, clean the sand out of our gear and prepare for our next trip. This time we would travel to northern Iraq, Kurdish territory, near the city of Irbil.

Unfortunately, we didn't get any frequent flyer miles on this mission. We got there the old-fashioned way … road trip. Fortunately, the British Ambassador had loaned us the use of a close protection team and two up-armored Toyota Landcruisers. We made the six-hour journey to Irbil, setting up shop in a former Baath party resort hotel.

But, we weren't there for a vacation; we had the same plan as before, visit as many of the suspected grave sites as possible, perform our geologic analysis and get back to Baghdad … safely.

Northern Iraq is tremendously different, geologically speaking, than southern Iraq. Rolling hills turning into mountains, stream fed valleys lead to green pastures. Not a place where you'd expect evidence of genocide and mass graves, but, to state the obvious, Saddam and his henchmen weren't exactly big fans of peace and tranquility.

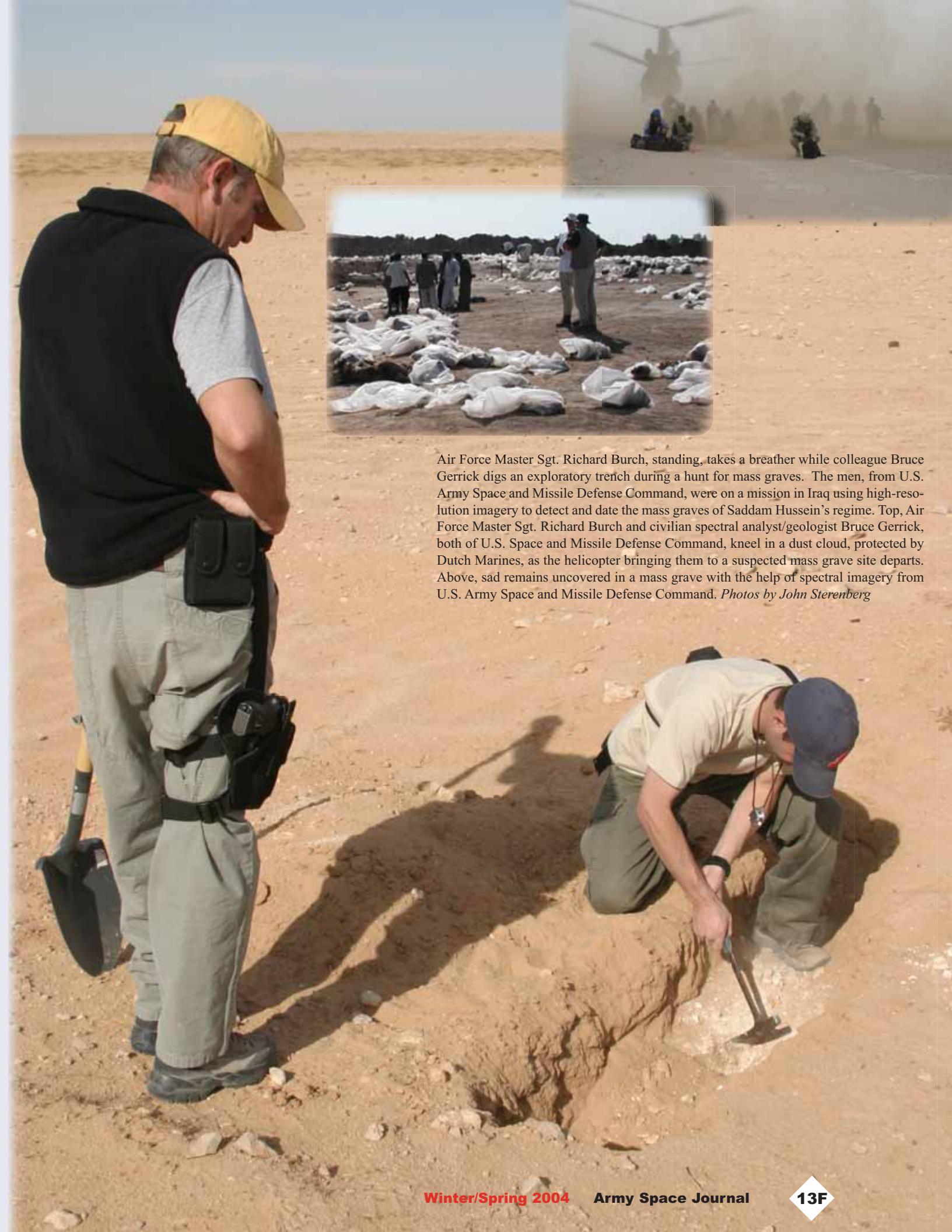
We were on an abbreviated schedule, so we had to investigate as many sites as possible in a seven-day period. That meant, we didn't have time to dig sample trenches (which was fine with me) at each site. The first few sites we visited held little promise in supporting our spectral analysis; they were in the middle of farmland with very little spectral features. The surrounding land had been tilled so much over the past decades that Bruce classified it as homogeneous.

The remaining sites in the area were better suited for spectral analysis, and contained the gypsum surface coating we were hoping to find. Unfortunately, most of the sites we visited in Northern Iraq had already been tampered with, either by the local populace or inadvertently by U.S. Soldiers that happened to set up camp near them, which made any post analysis difficult.

With all of the logistical planning involved in the anticipated arrival of a Finnish forensic excavation team, the remainder of the mass grave assessments were put off until late spring/early summer. We felt we had enough background data on the highest priority sites to continue our analysis and could provide ample support to the assessment team from the rear. So, again, I passed on my contact information, assured ongoing SORC support and prepared our equipment for redeployment.

I have a lifetime's worth of experiences and memories from this deployment, from the places I've traveled and sites I've seen, to the people I've met and the lasting friendships I'll savor.

The one memory I wish I could forget is that of the pretty little dress with the gold ribbon — buried in one of the many killing fields of Iraq.



Air Force Master Sgt. Richard Burch, standing, takes a breather while colleague Bruce Gerrick digs an exploratory trench during a hunt for mass graves. The men, from U.S. Army Space and Missile Defense Command, were on a mission in Iraq using high-resolution imagery to detect and date the mass graves of Saddam Hussein's regime. Top, Air Force Master Sgt. Richard Burch and civilian spectral analyst/geologist Bruce Gerrick, both of U.S. Space and Missile Defense Command, kneel in a dust cloud, protected by Dutch Marines, as the helicopter bringing them to a suspected mass grave site departs. Above, sad remains uncovered in a mass grave with the help of spectral imagery from U.S. Army Space and Missile Defense Command. *Photos by John Sterenberg*